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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,754	08/17/2001	Emil Kamieniecki	QCS-001DV3	5384

21323 7590 10/28/2002

TESTA, HURWITZ & THIBEAULT, LLP
HIGH STREET TOWER
125 HIGH STREET
BOSTON, MA 02110

EXAMINER

HOLLINGTON, JERMELE M

ART UNIT PAPER NUMBER

2829

DATE MAILED: 10/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,754

Applicant(s)

KAMIENIECKI ET AL.

Examiner

Jermele M. Hollington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 53-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 53-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a first surface and a second surface [claim 1] must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 53-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamieniecki et al (5091691).

Regarding claim 53, Kamieniecki discloses [see Fig. 17] an apparatus for making surface photovoltage measurements of a semiconductor comprising a sealed chamber (represented as enclosure 197) [see column 12 lines 15-19] for processing the semiconductor wafer (represented as specimen 11) [see column 4 lines 34-37 and column 6 lines 32-36] having a first surface and a second surface [see Fig. 17] and a head assembly (represented as arrangement 191) having a

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modulated light source (43) exposing [via glass plate 201] at least a portion of the semiconductor wafer (11) to light having a wavelength and modulated at a frequency [see column 7 lines 29-35 and lines 49-62 and column 12 lines 39-42] and a surface photovoltage sensor (represented as reference electrode assembly 199) comprising a plurality of electrodes (transparent plate 201, edge pick up areas 205, 207 and 209 and central pickup area 203) positioned adjacent to the first surface [see Fig. 17] to detect a surface photovoltage [see Abstract lines 6-8] induced at the first surface of the semiconductor wafer (11) in response to the light [via light source 43] without contacting the wafer (11) [see column 12 lines 39-50], the plurality of electrodes (201, 203, 205, 207 and 209) sufficient for detecting the surface photo-voltage on the first surface and the surface photo-voltage sensor (199) of head assembly (191) located within the sealed chamber (197).

Regarding claims 54-56, Kamieniecki discloses the sealed chamber (197) as a reduced pressure chamber, a chemically reactive gas chamber or an inert environment chamber [see column 12 lines 15-16 and column 13 lines 42-46].

Regarding claim 57, Kamieniecki discloses [see fig. 17] the head assembly (191) is entirely located within the sealed chamber (197).

Conclusion

Applicant's arguments with respect to claims 53-57 have been considered but are moot in view of the new ground(s) of rejection.

The applicants argue: "...Kamieniecki does not disclose every claim element of the claimed invention as presently amended. Applicant has amended claim 53 to include the limitations of a plurality of electrodes to the surface photo-voltage sensor that are adjacent the

first surface of the wafer such that, the plurality of electrodes is sufficient for detecting the surface photo-voltage on the first surface of the wafer." The examiner disagrees with the statement. In reviewing Kamieniecki et al, Fig. 17 discloses the best view of what is being claimed. The figure shows a reference electrode assembly 199 [see column 12 line 18] that is able to sense a surface photo-voltage [see Abstract lines 6-8] from a specimen of a semiconductor material. In order for the reference electrode assembly 199 to sense the SPV signal, it requires the assistance of transparent plate 201 and pick up areas 203, 205, 207 and 209 or electrodes as used in the claim rejections above. These items are used to pick up SPV signals from the specimen 11 surface once a light source 43 direct a beam of light to the surface of the specimen [see column 7 lines 49-52]. As shown in Fig. 17 items 201, 203, 205, 207 and 209 are adjacent to the first surface of the wafer (specimen 11) in order to help detect the SPV signals.

The applicants argue: "... *Kamieniecki disclosed an apparatus for measuring the surface photo-voltage by requiring in almost all embodiments that the probe assembly be in contact with the wafer. When the surface photo-voltage is measured according to this reference, the probe assembly must be held in close compliance with the wafer surface either by pressure or magnetic field (col. 4 lines 41-55).*" Although the examiner agrees with the applicants on that statement, the examiner did not use that embodiment in the previous office action. In the previous office action, the examiner uses the embodiment of Fig. 17 that entails "When the SPV measurements are being made, the reference electrode, which is included in the reference electrode assembly, is maintained at a precise distance from the specimen and locally parallel to the specimen by selectively energizing the piezoelectric actuators" [see column 4 lines 55-63].

4. The applicants argue: "*In only one embodiment, does Kamieniecki disclose that the surface photo-voltage is to be measured while the probe assembly is spaced above the wafer surface by a predetermined distance. (col. 12 lines 13-50). However, this embodiment requires, as do all the other embodiments of Kamieniecki, that the wafer be seated on a back electrode, which consists of a conductive metal connected to ground. (col. 6 lines 370-45).*" First, the examiner will like to point out that the features noted by the applicants against Kamieniecki reference are not recited in the rejected claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Secondly, Kamieniecki et al disclose [see col. 12 lines 13-14] that specimen is located on a support plate 19 that is mounted on an insulator 193 made of glass rigid material. Nowhere within this embodiment that will indicate the support plate is a conductive metal as argue above.

Therefore base on the above reasons, Kamieniecki et al reads on the amended claims.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Verkuil (5442297), Fung et al (5650731), Yoshino et al (5708365), Liberman et al (6034535 and 6097205), Verkuil et al (6060709), Kohn et al (6163163), and Kamieniecki et al (6315574 and 6388455) disclose a method and apparatus for measuring a photo-voltage of a semiconductor wafer.

6. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

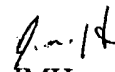
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (703) 305-1653. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703) 308-1233. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.


JMH
October 21, 2002

Jermele M. Hollington
Examiner
Art Unit 2829

KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800